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NCHSR

ORIGINAL
program noteNATIONAL CENTER FOR HEALTH SERVICES RESEARCH
AND HEALTH CARE TECHNOLOGY ASSESSMENT
1-46 Park Building • Rockville, MD 20857 • 301/443-4100

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410**NCHSR Offers Grants for Research
on Health Care Technology Assessment**

The National Center for Health Services Research and Health Care Technology Assessment (NCHSR) encourages interested and qualified investigators to apply for grants to conduct research in the field of health care technology assessment.

This announcement describes the research program in general, identifies areas of particular interest to NCHSR at this time, summarizes application and review procedures, and includes the address and telephone number of staff members who can provide advice and assistance.

NCHSR supports and conducts research on specific health care technologies, methods to improve technology assessment, and ways to monitor and affect the introduction and use of health care technologies, under the authority of Public Law 98-551. The term "health care technology" includes drugs, devices, and procedures used in providing health services and the organizational and supportive systems through which health care is delivered. Issues for research include the appropriate use, effectiveness, and cost effectiveness of health care technologies, as well as their economic, legal, and ethical consequences.

Expanding health insurance coverage and a period of unparalleled technological innovation have re-

sulted in improved access to health care and higher quality care. These significant gains in delivering health services over the past two decades have not been without cost, however. Total national health expenditures currently amount to more than 11 percent of the Gross National Product. More than 40 percent of these expenditures are reimbursed through Medicare, Medicaid and other public programs (1). Third-party payors in the private sector, as well as individual purchasers of health services, share the same concerns for controlling costs while protecting or enhancing the quality of care. In the face of these pressures, even those technologies which do not seem to increase costs must be evaluated in terms of benefits to be gained and risks incurred by individual patients.

There are important cost and benefit questions from the societal viewpoint, as well as an array of ethical and legal concerns. Organ transplants, either live or artificial, represent a particularly poignant example of such problems, involving high costs, individual patient rights and expectations, societal needs and responsibilities, quality of life issues, and a host of related factors which need further exploration.

Long-term effects of technology utilization also deserve study in light of the untoward consequences which may not be recognizable early, the expanded applications of a technology beyond the conditions for which it was originally evaluated, and the evolution or displacement of a technology in medical practice. Furthermore, many technologies in common use have never been rigorously evaluated, and it has been suggested that as many as 15 to 20 percent of them may be useless, redundant or potentially dangerous (2). Because careful and systematic investigations can make significant contributions to clarifying and resolving such problems, NCHSR intends to increase its activities in the field of technology assessment research considerably over the next few years.

Areas of research interest

Specific technologies: The reasons for selecting a particular technology to be evaluated must be justified in terms of representativeness, expected clinical or societal effects, or impact on the organization or financing of health services. Furthermore, NCHSR is particularly interested in those technologies that have reached a state of development in which questions can be asked about their effectiveness and appropriate use, rather than their safety and efficacy. (In this context, "effectiveness" refers to how well the technology works in actual clinical practice, rather than under research conditions.) Determinations of the safety and efficacy of many drugs and devices are largely the responsibility of other Federal agencies, including the National Institutes of Health and the Food and Drug Administration.

An important aspect of technology assessment consists of studies which systematically examine the organizational, economic, and clinical effects on the health care delivery system of introducing, modifying, or extending a specific technology. These policy studies place special emphasis on those unintended, indirect, or delayed consequences that affect the cost, accessibility and quality of health care available to the population. The effects of changes in the ways a technology is used are a matter of particular concern.

Other questions of interest include: comparative studies of diagnostic and therapeutic technologies in tertiary care centers *versus* community hospitals, evaluations of the validity and acceptability of the criteria in common use for determining the success or failure of medical technologies, studies of the interaction between newly introduced technologies and older technologies, and exploratory studies of the ability of providers and patients to understand and assess complex health care technologies.

Computer-based information systems are particularly important to NCHSR's technology assessment activities. The use of these systems for management and record-keeping purposes is expanding rapidly, providing greater opportunities for monitoring and exploring the effectiveness of changes in the use of diagnostic, therapeutic or supportive technologies. Systematic and comprehensive evaluations are needed of the role of artificial-intelligence techniques as decision aids in promoting more efficient and effective patient care. It is important to examine the value of clinical data bases in assessing technologies, and to explore the extent to which expanded and integrated practice-based and community-based information systems can serve as epidemiologic tools for technology assessment.

Methods for assessing technology: Currently the field of health care technology assessment is severely limited by methodologic and data problems which affect the accuracy, timeliness, and utility of evaluative information. Research in this category should focus on those methodologies with potential for broad application in a variety of health care settings or to a variety of technologies (3).

Cost-benefit and cost-effectiveness analysis techniques have become increasingly prominent in health policy discussions over the past few years (4), but it is now being recognized that these methods, derived from studies of industry, cannot be safely applied to health issues without considerable modification, particularly with regard to concepts such as equity, quality of life, and society's responsibilities for health care. Similarly, decision analysis approaches seem promising for evaluating the effectiveness and efficiency of drugs, devices, and procedures (5), but considerable work is needed in such areas as assuring the accuracy and representativeness of data, or formulating simpler methods to assess values and probabilities.

Another method, meta-analysis, is a quantitative approach that estimates the effects of an experimental intervention through aggregating the results of a series of related studies (6). This technique offers great promise particularly for those technology assessment issues in which large-scale controlled trials are difficult to manage, prohibitively expensive, or hampered by serious ethical issues. Much more testing of the procedures used in this approach is needed, however, before meta-analysis can be considered valid and useful.

Another area in which methodologic investigation is important is the formulation of a persuasive strategy for selecting a particular technology to be assessed and identifying the stage in its development at which the evaluation would be most acceptable,

economical, and useful. The widespread interest in evaluating technologies in all sectors of the health system is evident in the considerable number of organizations conducting technology assessment activities during the past few years, largely independent of each other (3). It would be of great value to establish a rational framework for coordinating and integrating these efforts.

Other examples of methodologic studies needed include the development of methods to assess the costs and benefits of rapidly changing technologies, short-term outcome measures to evaluate diagnostic and therapeutic effectiveness, innovative ways to use existing data sets for technology assessment, and improved techniques for eliciting and aggregating judgments and preferences.

Technology diffusion: Factors affecting the diffusion and adoption of technologies in the health care system are not well understood; it is important to learn more about how different incentives drive or impede the entire process. Such information is required for the rational allocation of scarce resources, the controlled development of useful technologies, and the restriction of questionable technologies. In addition, better information is required to determine the relative influence of factors which stimulate the genesis of a technology and contribute to its continued development and eventual application. Included among these factors are the likelihood of clinical advances, the potential for improved cost effectiveness, the profit motive in private organizations and the regulatory or protective concerns of public bodies, reimbursement policies, the influence of special interest groups, the threat of malpractice suits, and the management of life-threatening situations.

The use of technologies can be increased or restricted in a number of ways (regulatory efforts, reimbursement policies, educational or licensing restrictions, professional or lay promotional campaigns, etc.) and it would be useful to know which of these approaches are more effective, whether their effectiveness varies significantly with the technology or the target audience, and which methods are most appropriately used or encouraged by governmental agencies, directly or indirectly, in meeting their responsibilities.

Application and review procedures

The NCHSR extramural research program provides grant support for health care technology assessment, and is authorized by Section 305 of the Public Health Service Act (42 USC 242c), as amended by P.L. 98-551. Grants will be administered under the

Code of Federal Regulations, 42 CFR Part 67, and the Public Health Service Grants Policy Statement.

Applications may be submitted by any public or private nonprofit institution or unit of State or local government. Applications must be submitted on Public Health Service form 398, Grant Application, except for applications from State and local governments, which are required to submit Standard Form 424, Application for Federal Assistance (Nonconstruction Programs).

Application materials are available from:

Chief, Review and Advisory Services Program
National Center for Health Services Research
and Health Care Technology Assessment
1-52 Park Building
Rockville, MD 20857; 301/443-3091

Application materials may be available from business or grants and contracts offices of academic or research institutions, and can be obtained from the National Institutes of Health, Division of Research Grants, whose address appears below. Enter "NCHSR" in item 2 on the front page of the Form 398.

The submission and review schedule is:

NIH/DRG submission	Study section review	Council review	Earliest start date
June 1 October 1 February 1	October March June	February June September	March 1 July 1 September 30

The original and 6 copies of the application should be sent or delivered to:

National Institutes of Health
Division of Research Grants
Room 240, Westwood Building
533 Westbard Avenue
Bethesda, MD 20205

All NCHSR research grant applications are reviewed for scientific and technical merit by a review panel of non-Federal scientists. Each application will be reviewed by the appropriate NCHSR study section according to the following criteria:

- the significance and originality of the project from a scientific and technical viewpoint
- the adequacy of the methodology proposed to carry out the project
- the availability of data and the adequacy of the data collection plan
- the appropriateness of the work plan and schedule for organizing and completing the project

- the qualifications of the principal investigator(s) and staff
- the adequacy of the facilities available to carry out the project
- the reasonableness of the budget
- the adequacy of the proposed protection of human and animal subjects.

Technology assessment applications exceeding \$50,000 in direct costs require consultation with the National Advisory Council on Health Care Technology Assessment before funding decisions are made.

Potential applicants are encouraged to consult informally with NCHSR staff before submission of research grant applications. Additional information concerning this program announcement is available from those listed below by calling 301/443-2080.

Medical informatics: Gerald S. Cohen

Technology assessments of drugs and devices:
James Ullom

Technology assessments of medical organizations:
Richard DuBois, Ph.D.

Technology assessments of medical practices:
James Calvert, M.D.

Development of methods and technology dissemination: James McAllister

Inquiries may be directed to:

National Center for Health Services Research
and Health Care Technology Assessment
Division of Extramural Research
Health Information Systems and Technology
Assessment
3-18 Park Building
Rockville, MD 20857

References

1. U.S. House of Representatives, Committee on Energy and Commerce. *Report on Medical Technology Assessment*. Report 98-818, 1984.
2. Iglehart, J.K. Health policy report: Another chance for technology assessment. *N Engl J Med* 309: 509-512, 1983.
3. National Academy of Sciences, Institute of Medicine. *Assessing Medical Technologies*. Washington, D.C., 1985.
4. U.S. Congress, Office of Technology Assessment. *The Implications of Cost-Effectiveness Analysis of Medical Technology: Summary*. U.S. Government Printing Office, 1980.
5. Weinstein, M.C., H.V. Fineberg. *Clinical Decision Analysis*. W.B. Saunders, Philadelphia, PA, 1980.
6. *Evaluation Studies Review Annual*, vol 8. R.J. Light, editor. Sage Publications, Beverly Hills, CA, 1983.

The NCHSR grant program is described in *Catalog of Federal Domestic Assistance* as Number 13.226. The review requirements of Executive Order 12372 are not applicable to NCHSR grant programs.

U.S. Department of Health
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Public Health Service
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